

THE IMPACT OF TOURISTIC INFRASTRUCTURES ON LOCAL QUALITY OF LIFE: THE CASE OF NOISE POLLUTION IN BARCELONA'S AIRPORT

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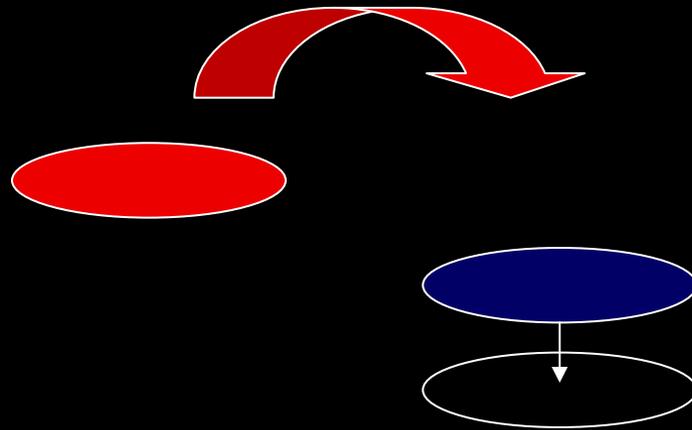
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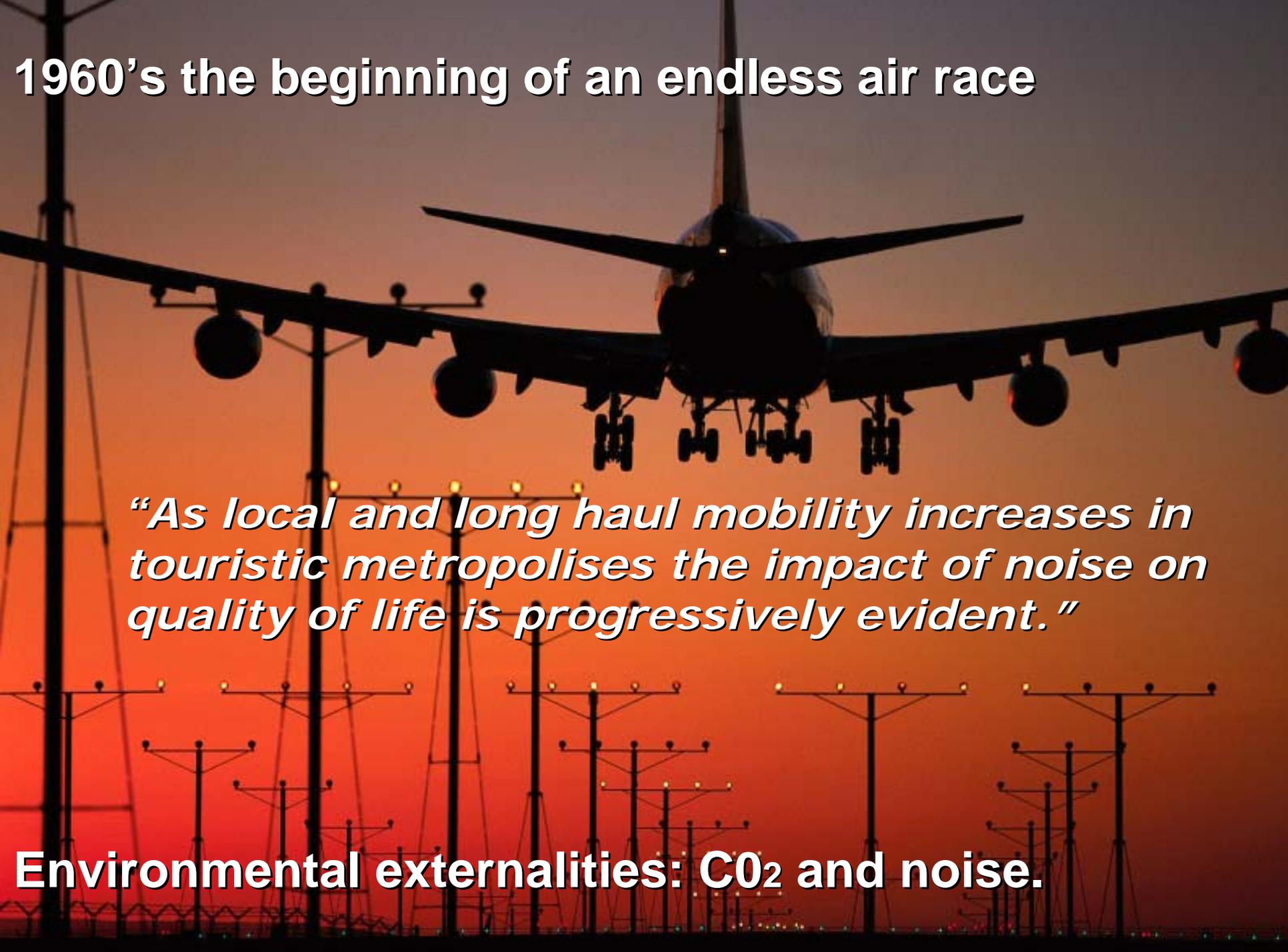
THE MASS TOURISTIC MODEL DOES PRODUCE BENEFITS AND EXTERNALITIES



**AN EXTERNALITY, CAN BE DEFINED AS AN
ALTERATION ON THE WELFARE LEVEL OF A THIRD
PARTY**



**IN GENERAL, EXTERNALITIES ARE NOT CONSIDERED RIGHT
INJURIES, AND EXTERNALITY PRODUCERS RARELY CAN BE TAKEN
TO JUSTICE COURTS**

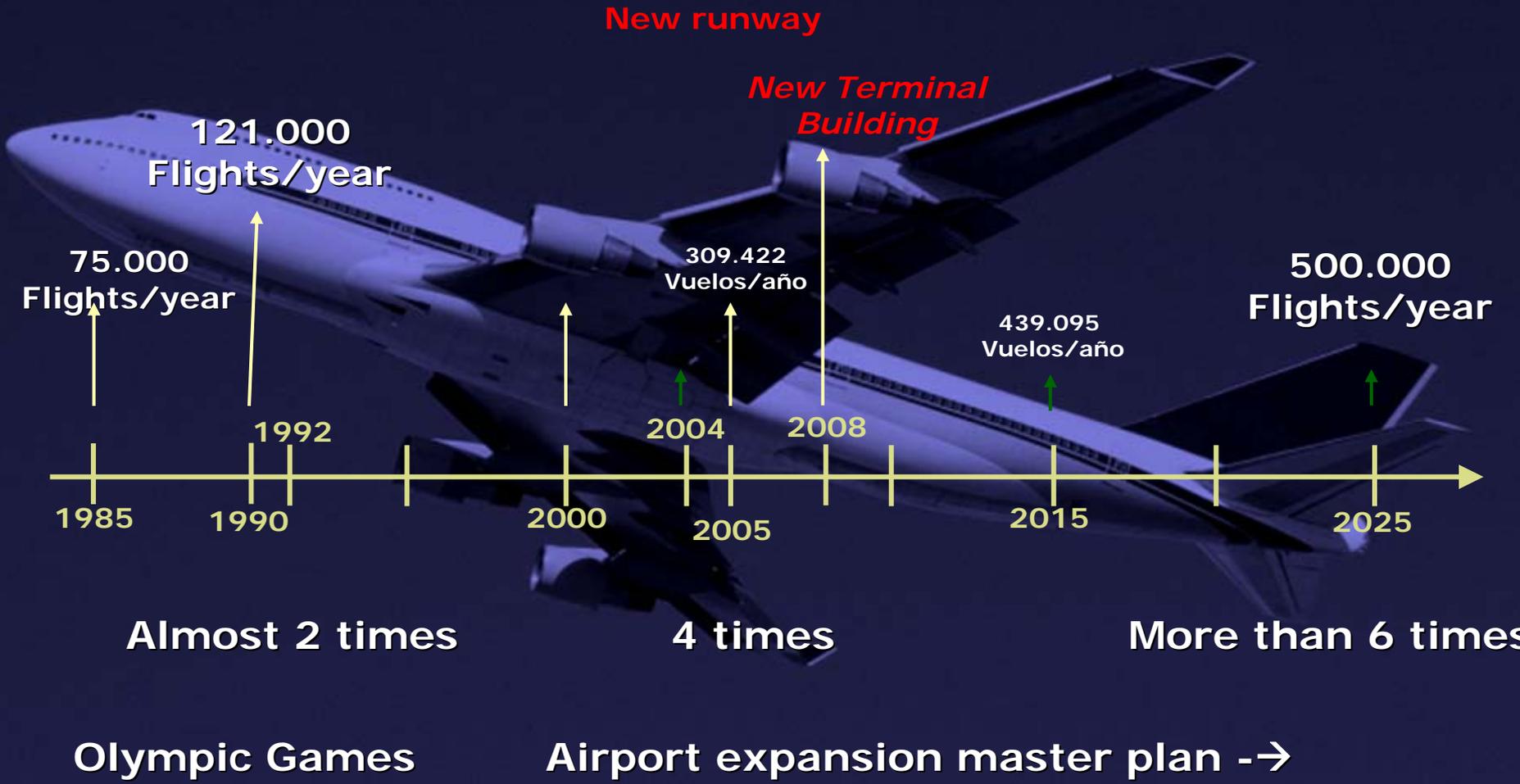
A large commercial airplane is shown from a low angle, flying directly towards the viewer. The aircraft is silhouetted against a bright orange and red sunset sky. Below the plane, a series of utility poles with cross-arms and lights stretch across the foreground, creating a sense of depth and scale. The overall scene conveys the proximity of air travel to populated areas.

1960's the beginning of an endless air race

“As local and long haul mobility increases in touristic metropolises the impact of noise on quality of life is progressively evident.”

Environmental externalities: CO₂ and noise.

Barcelona's Air traffic evolution



Barcelona's Air traffic evolution



Barcelona's Air traffic evolution



2004's pathway reconfiguration



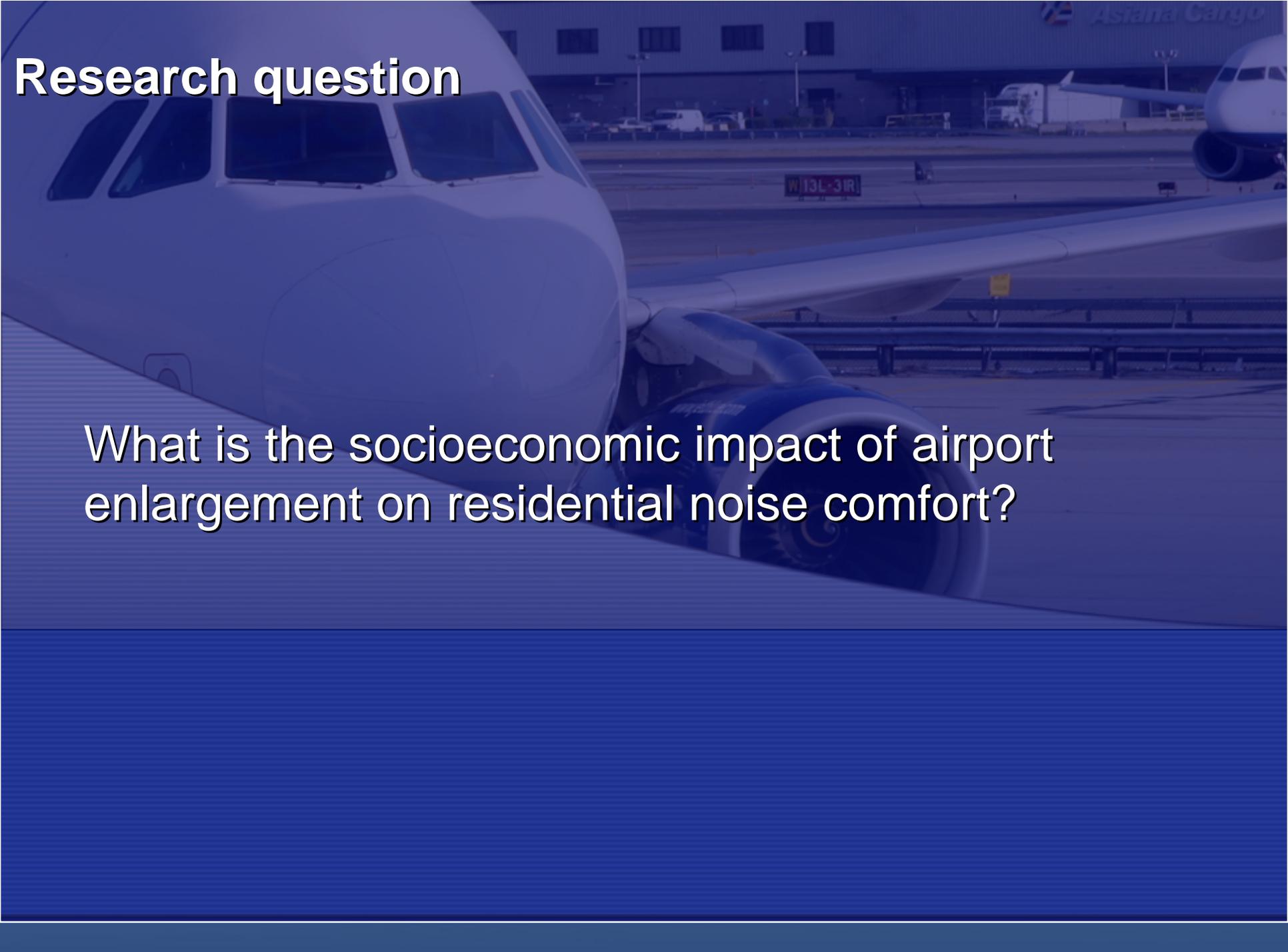
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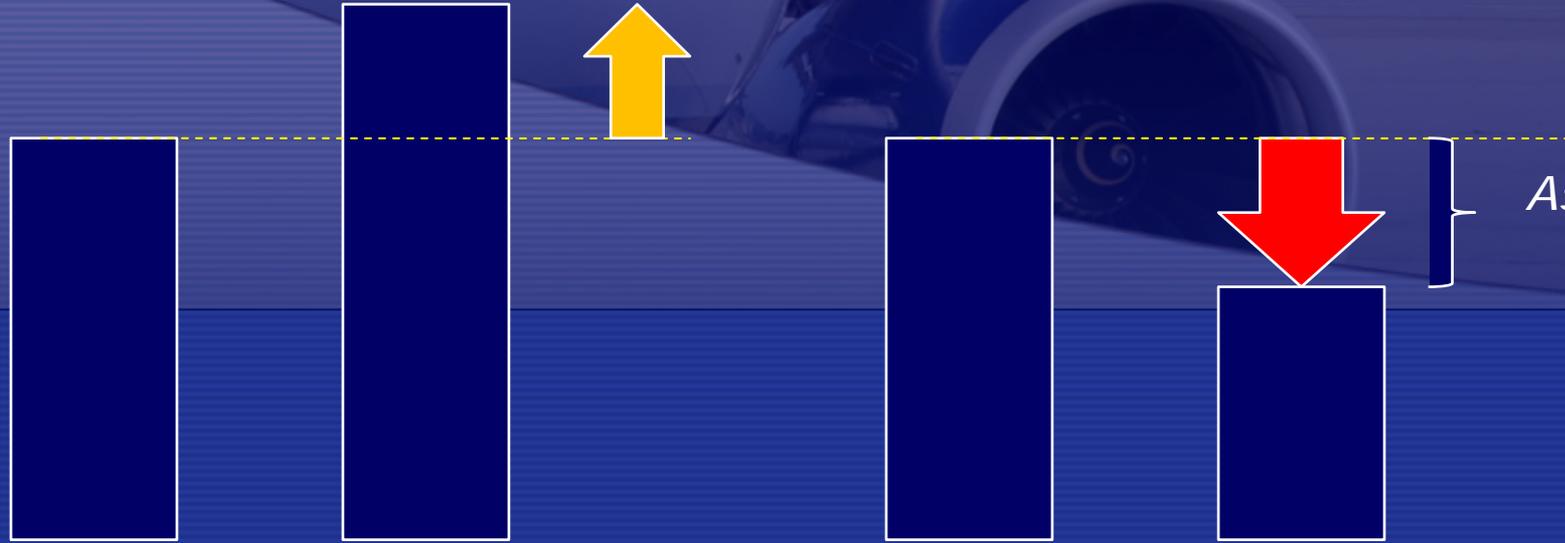
Research question

What is the socioeconomic impact of airport enlargement on residential noise comfort?

Hypothesis

Noise annoyance

Welfare level



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2004

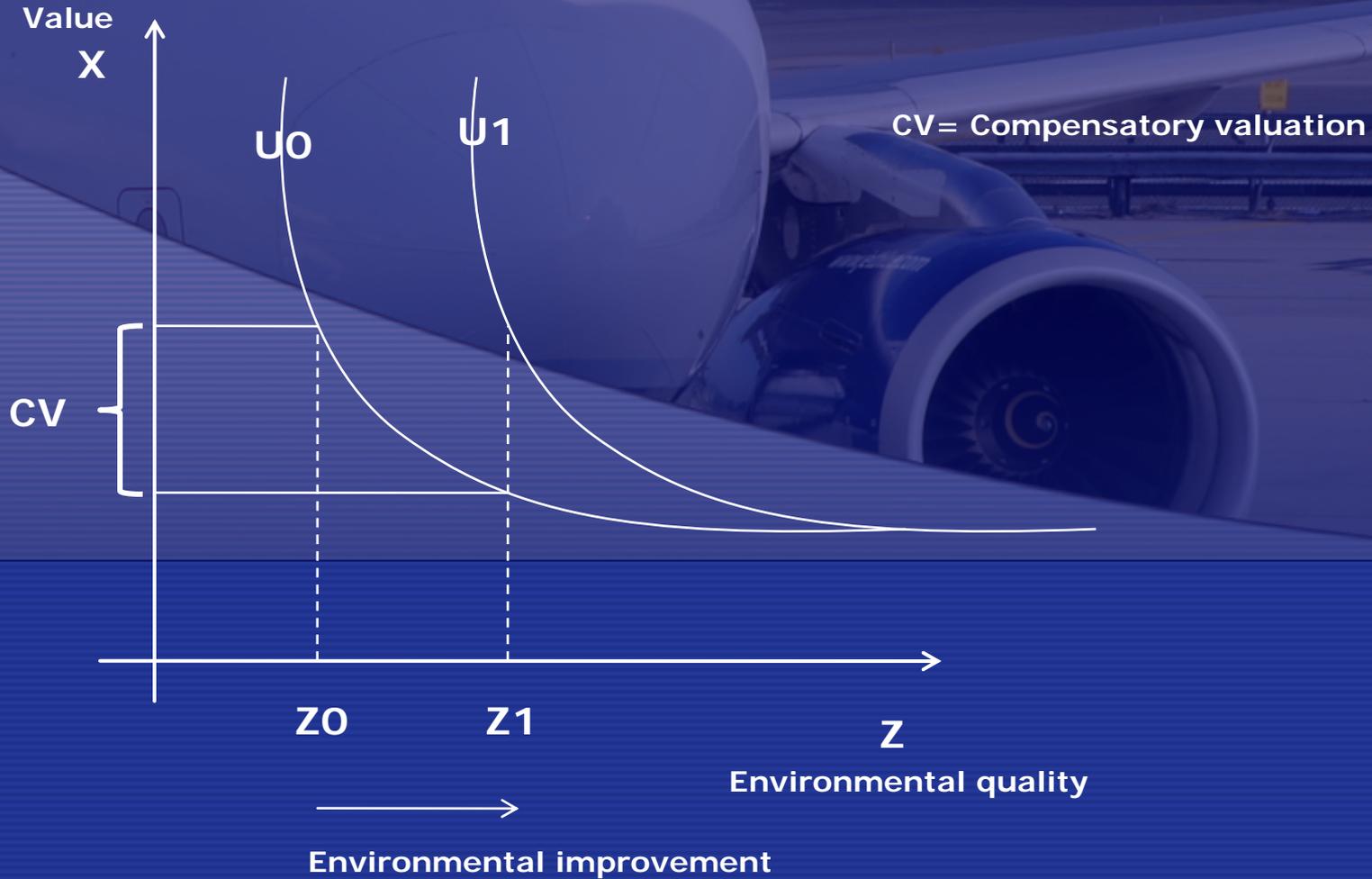
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Assesment

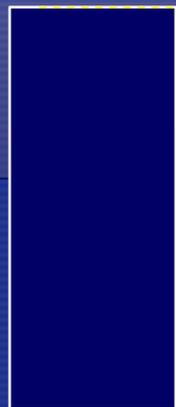
Theoretical framework



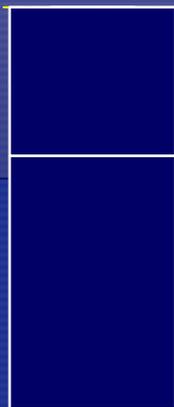
Theoretical framework

Contingent valuation (CV) willingness to pay (WTP) see Feitelson (1996), Praag & Baarsma (2005) or Bristow & Wardman (2006).

Welfare level



*<sep
2004*

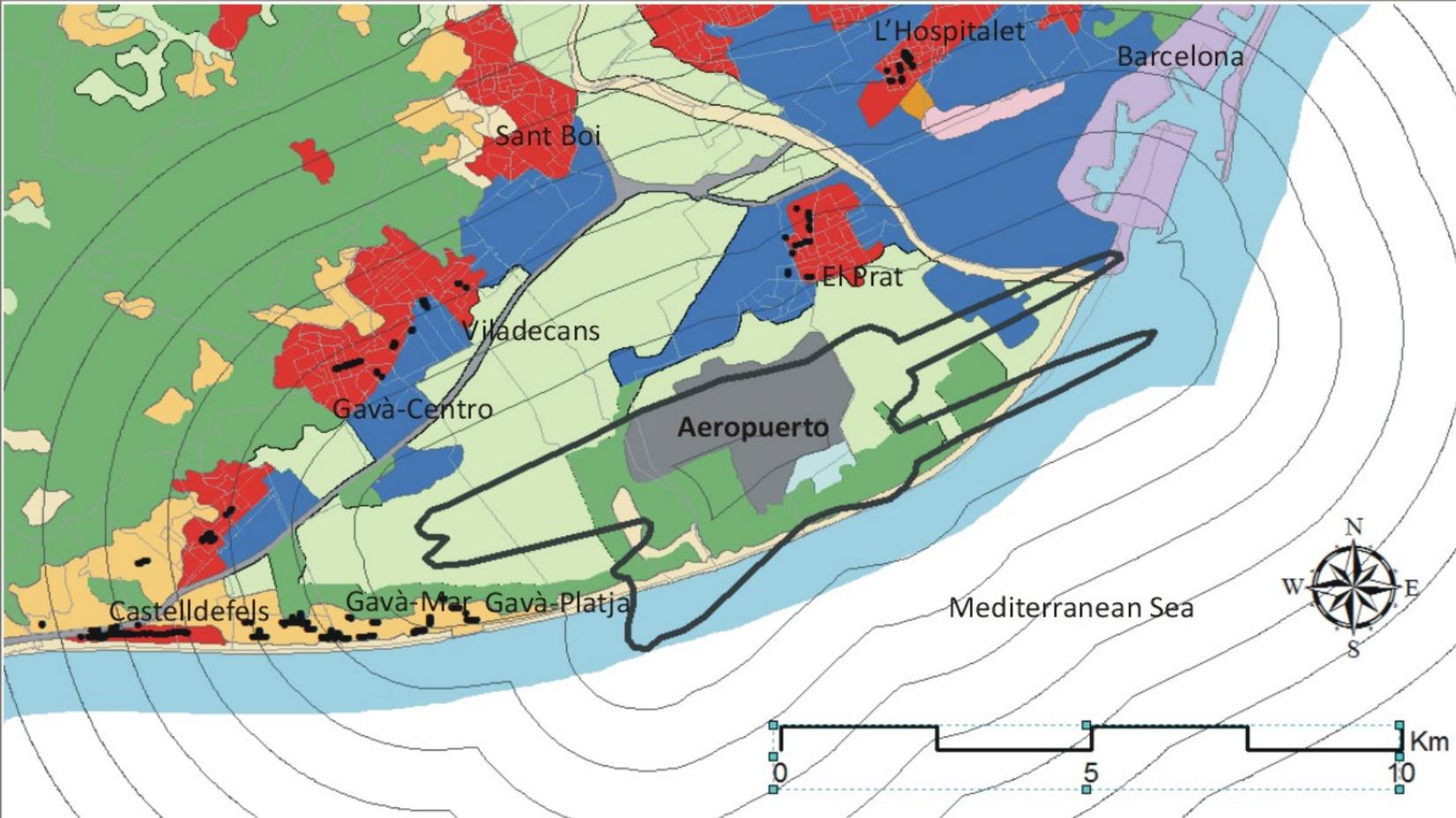


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2004*



*Assesment
= WTP*

509 face to face surveys (April 2007)



Legend

-  Sonic line 65 Db EIA 2002
-  Buffers 1km de la Isófona 65 Db EIA 2002
-  Survey point
-  Census tract

-  Compact residential areas
-  Sprawled residential areas
-  Manufacturing, office and logistic parks
-  Airport
-  Cultivated area
-  Forest area

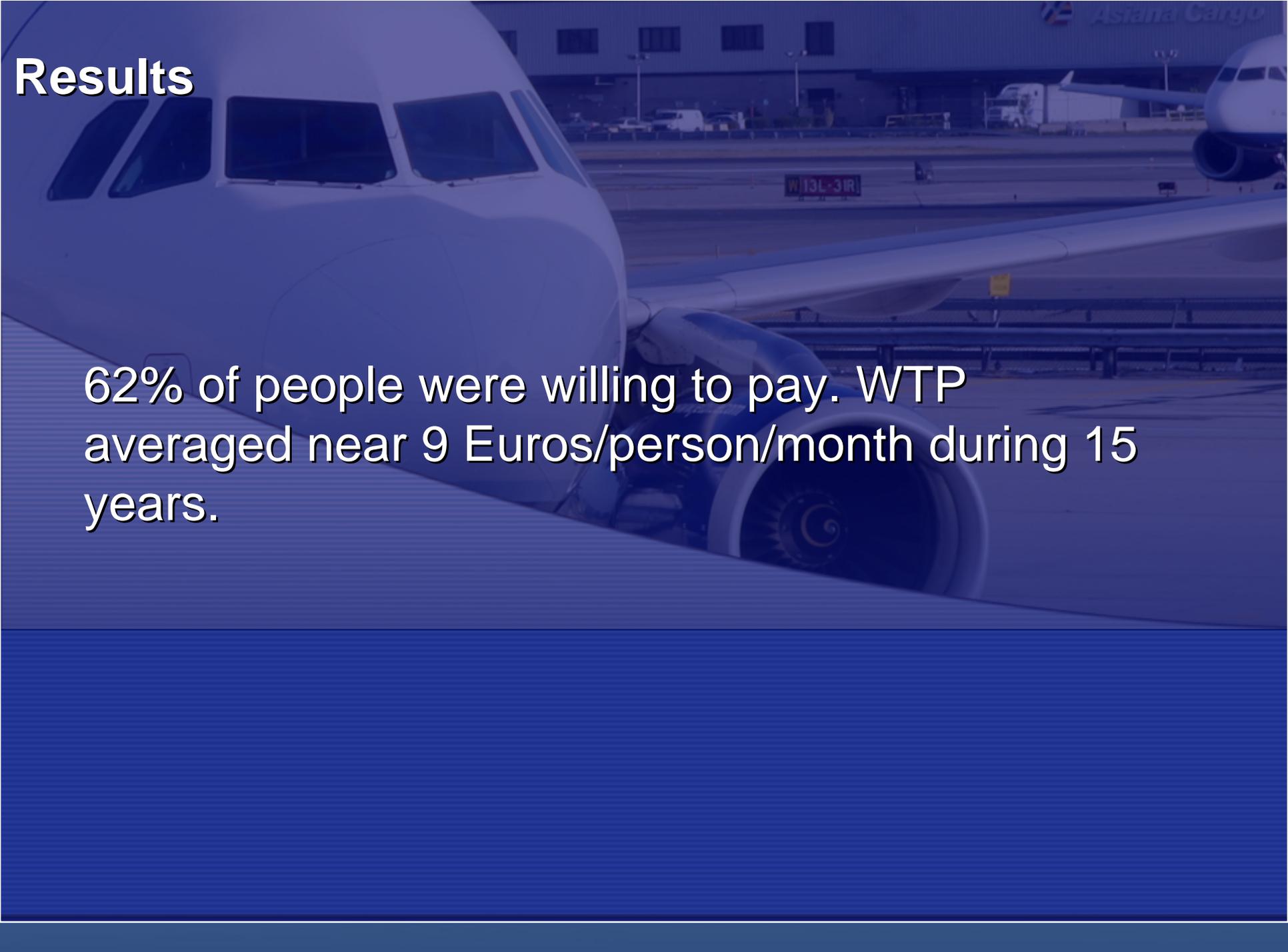
The assessed environmental good

To reduce the noise annoyance to before-airport-enlargement level.

By means the building of a new sea-oriented runway.

Citizens would fund partially the building cost

Results



62% of people were willing to pay. WTP averaged near 9 Euros/person/month during 15 years.

What's behind of WTP?

OLS lineal
Regression

Dependent variable

Independent
covariables

WTP

1. Survey information (noise annoyance, income, etc.)
2. Census tract info (demographics and housing)
3. Corine Land Cover (land use)
4. Proximity to aerial pathways
5. Real estate selling prices

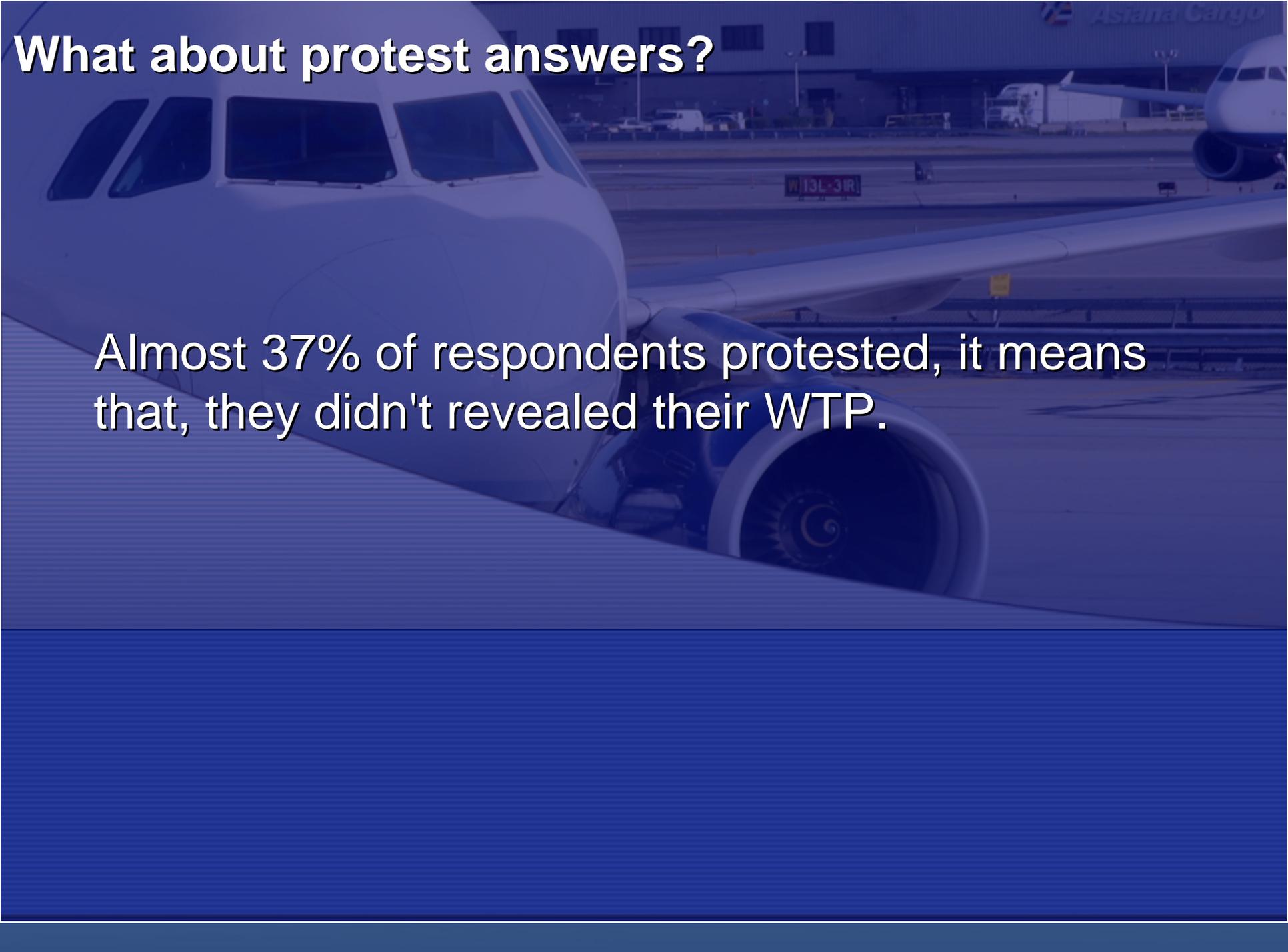
What's behind of WTP?

Multiple regression
 $R^2 = 0.32$

Geographical
weighted
regression $R^2 = 0.49$

Covariable	Result	Sig.
As higher is income	Higher is WTP	0.002
As higher is noise annoyance	Higher is WTP	0.027
When people live in an against-airport association area	Higher is WTP	0.016
As higher is road traffic annoyance	Lower is WTP	0.012

What about protest answers?



Almost 37% of respondents protested, it means that, they didn't revealed their WTP.

Who are the protesters?

Are those more annoyed by airport noise, so average WTP is undervaluated.

Variable	No protesta	Protesta	Análiss anova	
	Media	Media	F	Sig.
disposicion a pagar por reduccion del ruido	8,95	ND	ND	ND
conocimiento de la ampliación aeropuerto (si/no)	88%	89%	0,027	0,869
nivel molestia ruido en general (0-10)	5,24	5,68	3,221	0,073
nivel molestia sonido aviones (0-10)	5,39	6,87	21,072	0,000
nivel molestia frecuencia despegue (0-10)	4,63	5,65	10,468	0,001
nivel molestia frecuencia aterrizaje (0-10)	5,24	5,63	1,468	0,226
nivel moestia volumen sonido (0-10)	5,77	6,91	14,470	0,000
nivel molestia ruta sobrevuelo (0-10)	6,02	6,94	8,176	0,004
intencion continuar residiendo si ruido igual (1=si)	88%	88%	-	0,990
intencion continuar residiendo si ruido aumenta (1=si)	53%	61%	2,460	0,117
Marcharia si el ruido incrementase (1=si)				
motivo instalacion medida especial para ruido aviones (1=si)				
número de miembros en la familia				
nivel de ingresos (euros netos/año/hogar)				
nivel de estudios (4=posgrado)				
Régimen de tenencia (alquiler)				
Hipótesis de revalorización si el ruido se redujese al nivel previo				
edad (años)				
Sexo (1=mujer)				
Vive en zona de asociaciones				
Vive en zona de asociación "A"				
Vive en zona de asociación "B"				

Most annoyed by

1.the volume of noise

2.The fact that aerial corridors go above their houses

Escala del nivel de molestia: 0= no molesta, 10= máxima molestia

What's behind of protest answer?

Logit regression model
65% correct predictions

Covariable	Result	Sig.
As higher is detached houses presence	Higher is protest probability	0,003
As higher is noise annoyance	Higher is protest probability	0,002
When people live in an neighborhood agains-noise association area	Higher is protest probability	0,038
As higher is income	Lower is protest probability	0,012

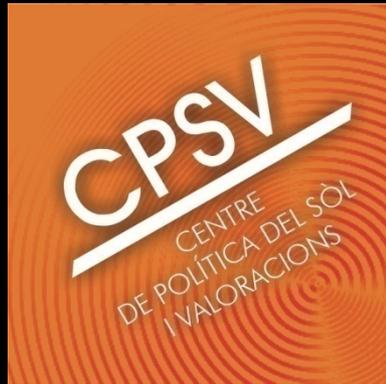
Noise exposure

Problem awareness

Conclusions

1. Noise annoyance has two effects on CV: 1) it increases WTP; but 2) also it increases protest answers.
2. WTP is highly influenced by sociological interaction because WTP is higher for people that belongs to neighborhood associations against airport noise (strategic behavior).
3. WTP is highly influenced by neighborhood interaction because geographical weighted models performs better that non-spatial interaction models.
4. So noise appraisal not only depends on subjective annoyance but mainly it is a social construction (social imaginary?)

Thank you



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